ADAT Head Cleaning

Questions and Answers about Cleaning the Heads of an ADAT

What is the difference between a head cleaning tape and the procedure?

The reference manual which you received with the ADAT describes general tape path cleaning instructions using a head cleaning tape. The head cleaning tape is still the recommended method for quick cleaning of the heads within the ADAT. However, the reference manual states that sometimes professional cleaning of the heads is required. This procedure documents the manner in which the entire tape path can be cleaned in a more detailed fashion, a method more familiar to professional video technicians. This method will also yield better results for the more discriminating owners of ADAT, such as professional recording engineers and studios.

How often is it necessary to clean the tape path on the ADAT?

The ADAT tape path should not require cleaning before the start of every session or project, nor do the heads require any scheduled maintenance. However, there are several indicators on the ADAT to assist you in determining when it is time to clean the tape path. Research shows that these indicators will begin to surface between 300-600 of DRUM ON HOURS. Drum on hours refer to the amount of time the drum is in contact with the tape. You can check the amount of Drum On Hours for your ADAT by holding the SET LOCATE button while pressing the STOP button.

What are the indicators that a head cleaning may be required?

The Advanced Information indicator is a small decimal light located to the right of the seconds counter on the ADAT front panel display. This light sometimes blinks sporadically when tape is running and is simply a normal indication that the ADAT is behaving properly. However, if this light begins to blink more often than not or if this light remains constantly lit, it may indicate that a cleaning is required.

Another, more severe indication that the heads are dirty is the message "ERR 7" appearing on the ADAT front panel display. This indicator informs the operator that the ADAT is losing its internal sync, which has been recorded on the tape during formatting. When the ADAT displays "ERR 7" during playback, or displays "ERR 8" during recording, it may be an indication that the tape path requires cleaning.

Is there any degradation of the audio when the ADAT heads are dirty, as is the case with analog recorders?

The audio quality of the data recorded on an ADAT with dirty heads will not be degraded. With ADAT, dirty heads primarily affect the FORMATTING of new tapes. If a tape is formatted on an ADAT with dirty heads, the result of the formatting may be a bad internal sync pulse which, in time, will degrade to an "ERR 7" condition.

What do I do if I clean the heads and still get the Advanced Information Indicator or "ERR 7"?

If you have any tapes which were formatted on a unit with dirty heads, and after a head cleaning the Advanced Information Indicator or "ERR 7" message is still being displayed, simply make a digital clone of the tape with the bad format. All of the audio on the tape will be retained but the sync track will be recorded properly. This should eliminate the Advanced Information Indicator or "ERR 7" condition. However, if this does not work, then it may be an indication of another type of problem. At this point you should send your ADAT to a qualified service center for analysis.

Will I ruin the alignment on the ADAT if I clean the heads?

The heads are very delicate and have been precision aligned at the factory prior to shipping. Therefore it is extremely important to exercise caution whenever cleaning heads. However, if the cleaning is performed in the manner described in this document, the tape path will retain its alignment.

What materials do I need to clean the tape path on the ADAT?

- 99% Isopropyl alcohol or other approved video head cleaning solution
- Lint-free clean-room rated cloth: Tech Spray Hydroentangled Cellulose/Polyester C-Fold Wipes (2350-100)
- Cotton or foam swabs
- Phillips-head screwdriver

It is important that the correct materials are used to clean the tape path of the ADAT. These materials are readily available from your local electronics supply or drugstore. The lint free cloths are essential ADAT head cleaning. Do not use any other type of cloth. Do not use cotton swabs on the rotating headstack as they can permanently damage the heads. Finally, do not use 71% Isopropyl alcohol (commonly known as rubbing alcohol). This type of alcohol has too much water in it and can affect the performance of the ADAT.

Head cleaning procedure

About head cleaning

Alesis recommends that the heads and tape path of the ADAT be completely cleaned every 250 hours of drum/tape contact or whenever contaminants are causing a high error condition. To see the number of drum-on hours, hold SET LOCATE and press STOP. An instructional video tape is available for purchase from Alesis Product Support which demonstrates head cleaning in detail. Head cleaning is within the capability of most people who are experienced with electronic equipment, but if done improperly may cause expensive damage. **Failing to unplug the unit before opening may cause electrical shock. If you are not sure of your competency, refer all service to an experienced technician at an Alesis service center.**

Familiarize yourself with the tape path

When cleaning the ADAT tape path for the first time, it may be a good idea to insert a tape into the transport after the top cover has been removed in order to view the tape path. To remove the top cover, simply remove the thirteen Phillips head screws which fasten the top cover in place. Next, insert any tape and press PLAY. Note how the tape is wrapped around the rotating headstack.

NEVER PUT ANYTHING IN THE WAY OF THE TAPE PATH WHILE THE HEADS ARE SPINNING.

This will most assuredly ruin the alignment and probably the heads themselves. Refer to Figure 1 for the identification of the various transport parts detailed in the text belowYou will notice as the unit plays that the tape is being fed from the SUPPLY HUB (Point A of Figure 1), and travels past a stationary tape guide, the TENSION ARM (Point B), the P1 POST (Point C) and the IMPEDANCE ROLLER (Point D). Once the tape passes the P2 ASSEMBLY (Point E), it will enter the ROTATING HEADSTACK (Point F) and pass by the heads. Note that the rotating headstack contains 4 heads, two for recording and two for playback. Once the tape exits the headstack, it will pass by the P3 ASSEMBLY (Point G), the LINEAR HEAD (Point H), the P4 POST (Point J) and then past the CAPSTAN/PINCH ROLLER ASSEMBLY (Point K). Finally, the tape is wound onto the TAKE UP REEL (Point L). Note that when the tape is not wrapped around the rotating headstack, or no tape is installed, the P2 and P3 assemblies as well as the tension arm are in the positions shown in Figure 1.

Cleaning the tape path

All of the surfaces which come in contact with the tape should be cleaned. Eject the tape and power off the ADAT. Wait until the rotating headstack stops spinning before cleaning. **UNPLUG THE ADAT!** Use a cotton swab dipped in alcohol and clean the tape guides. **NEVER USE COTTON SWABS ON THE ROTARY HEADS THEMSELVES.** It is easiest to develop a system so that you always clean the tape path in the same manner. This will prevent you from missing any guides along the way. Start with the stationary tape guide and then move on to the tension arm, P1 post and the impedance roller. It is OK to use alcohol on the plastic impedance roller. Also note that you should clean these guides in a side to side motion instead of an up and down motion. This is the same motion as the tape travel.

The P2 and P3 assemblies include the white rollers and the stationary, angled, tape guides. Make sure that you rotate the white rollers when cleaning them in order to fully clean these parts. The capstan may be cleaned with alcohol without worry of alcohol dripping into the shaft. (This is mentioned because some other tape decks have direct drive capstans and therefore caution must be exercised so that no alcohol drips into the motor. Since the capstan on the ADAT is belt driven, this is not a concern.) Finally, clean the P4 post and linear head. Clean the linear head with side to side strokes to keep the cotton swab in line with the tape travel across the head. You will note that the linear head resembles a normal analog stationary head.

Cleaning the rotary heads

Now you are ready to clean the rotating headstack. Because of the precision alignment of these heads, it is very important to follow these instructions carefully. Take a piece of lint free cloth and dip it in alcohol. Now place the cloth against the rotating drum (the easiest spot to hold the cloth is on the right side of the drum) and gently hold it in place with you index finger. While applying a VERY MILD pressure to the drum, spin the rotating head **in a counter clockwise direction**. This is the direction of its normal travel. There is a round rotor above the drum which spins with the drum. You can spin the drum by spinning this part. In this manner, your finger will not touch the headstack. If you place your index finger against the head and very gently rotate the drum with your other hand, you will feel the heads rubbing against the cloth. Continue cleaning the drum until no more residue shows up on the cloth. Remember to keep the cloth moist with alcohol. You don't want to have a dry cloth contacting the heads. Also, it is very important that you **do not move the cloth or your finger while the drum is spinning**. It will most certainly throw the heads out of alignment.

Once the heads have been cleaned, you should now clean the helical groove (Point M of figure 1). This groove is located on the headstack in the lower drum portion. The lower drum does not spin so a cotton swab will suffice for cleaning. However, you may have to rotate the upper drum a little to keep the heads away from the cotton swab. **Do not allow the cotton swab to come in contact with the heads.**

Finally, put some rubber cleaner on a cotton swab and clean the pinch roller. Turn the pinch roller as you clean it. Do not use alcohol on the pinch roller as it will cause the rubber on the roller to eventually dry up and cause problems with tape travel across the capstan. Some rubber cleaners advise that you wipe off the excess with a dry cloth. If this is the case with your cleaner, remember to do so. If you have a dirty pinch roller but have no rubber cleaner, then water is an acceptable substitute. However, water will not fully clean the pinch roller like a rubber cleaner is designed to do.The idler wheel, between the supply and take-up hubs, should also be serviced or replaced when cleaning the heads.

See "Replacing the Idler Wheel" and "Cleaning the Idler Wheel**" for more information.**

CAUTIONS!!!!!

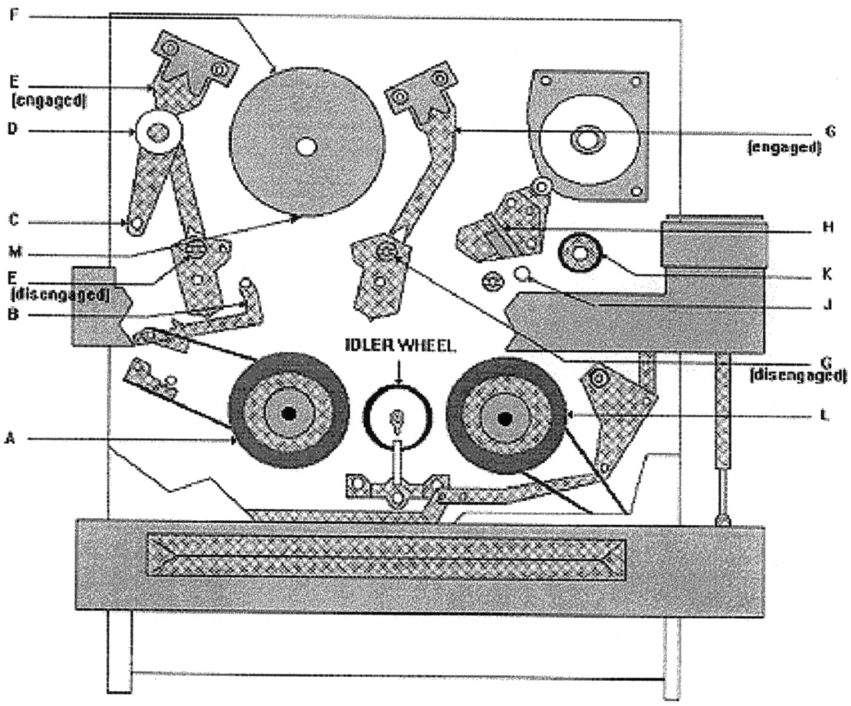
DON'T put a tape in the transport until all of the alcohol has had a chance to evaporate. If you insert a tape into the deck without letting the alcohol evaporate, there is a very good chance that the tape will slide up the rotating headstack and become instant garbage. Be warned. We suggest that you wait a minute or two before inserting a tape just to be sure. If you put the top cover back on the unit and screw it down with the thirteen Phillips screws, that should be a sufficient amount of time for the alcohol to evaporate.

DON'T move your finger when cleaning the rotating headstack. Especially do not use an up and down motion because if you do, the chances are that the heads will be thrown out of alignment and possibly damaged. If you clean the drum with up and down strokes, and then try to play a tape, sometimes the ADAT will display "NoFo" or "ERR 7" on the every tape in your archive. This is because the heads are either damaged or out of alignment and the ADAT can not read the information previously recorded onto tape. If this happens, you will need to send the ADAT to a service center for re-alignment.

DON'T use anything but a lint free cloth on the rotating heads. If you use a cotton swab on the ADAT's heads, little pieces of cotton may get stuck in the head assembly. You can remove them but it is not guaranteed that the heads are free of debris. You may have actually made the heads worse than they were before you started cleaning the deck.

Remember, it does not take much to ruin the alignment of the heads within the ADAT. This is not intended to be a scare tactic but should be noted. Proper cleaning of the ADAT transport will keep your ADAT healthy and working to optimum standards for years to come.

Figure 1: Top view of ADAT transport



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Cleaning an ADAT idler wheel

Introduction

The ***Idler Wheel*** inside an ADAT transport is a small, white plastic disk with a black rubber ring around it. It is located inside the transport between the supply hub and the take-up hub and its purpose is to transfer the reel motor's rotation to the hubs during fast forward, rewind, play and record modes. During normal operation, the rubber ring around the Idler Wheel can become coated with tape oxide and other debris causing it to lose traction. Symptoms of this problem can be **sluggish rewind**, **Nofo, Full, Err7, Err8, Err9, dropping out of sync, dropping out of record.** If you have this problem, you may need to clean or replace the Idler Wheel.

Tools Required

- Phillips Head Screwdriver
- Cotton Swab
- Rubber Cleaner (or Video Head Cleaner that does not contain alcohol)

Cleaning Procedure

1. Eject any tape inside the ADAT.

2. Turn off the power and disconnect the AC cable.

3. Remove the top panel of the ADAT or ADAT-XT using the Phillips screwdriver.

4. Locate the Idler Wheel between the supply hub and the take-up hub (refer to the diagram on the next page).

5. Dip the swab in the rubber cleaner and scrub the rubber ring of the idler wheel until the finish becomes dull.

6. Clean the two black reel hubs where they come in contact with the idler wheel until they are clean.

7. Replace the top of the unit.

Instead of cleaning it, the idler wheel is an inexpensive item which may be replaced easily. Contact the Alesis Parts department to order a replacement idler wheel if cleaning does not cure the symptoms.

Idler Wheel replacement procedure

The Idler Wheel inside the ADAT transport is a small plastic disk with a rubber ring around it. This part transfers the Reel Motor's rotation to either the supply or take up reel hubs during fast forward, rewind, and play modes. Because of the constant contact this part makes with the ADAT's plastic hubs and Reel Motor Capstan, it will eventually wear and cause the ADAT transport to behave sluggishly. The life of the idler wheel can range anywhere from 300 to 750 "Drum On" hours as indicated on the ADAT front panel [press SET LOCATE and STOP simultaneously on the ADAT front panel to note the amount of Drum On hours]. Because the idler wheel is inexpensive and easy to replace, it should be replaced as part of scheduled maintenance or whenever performance suffers. Follow this procedure carefully to replace the Idler Wheel. **Be careful during the procedure not to touch any other parts of the transport, particularly the head drum.**

Tools Required

Phillips Head Screwdriver

Tweezers or Needlenose Pliers

Parts Required

The idler wheel used in the ADAT-XT is of a different size and material from that used in the ADAT. **The parts are not interchangable.** Call or fax Alesis Product Support and order the proper idler wheel kit for your model. It comes with a copy of this instruction sheet. Part # 8-50-0028 is for ADAT, and 8-50-0053 is for ADAT-XT.

Procedure

Review all the steps listed below prior to replacing the idler wheel for the first time.

1. Eject any tape inside the ADAT.

2. Turn off power and disconnect the AC power cable before proceeding.

3. Using the Phillips Head Screwdriver, remove the ADAT top panel by removing the thirteen (13) screws which fasten this panel to the ADAT. If you have an ADAT-XT, remove the top hood by removing the one screw at the back of the top, the two on each side, and slightly loosening the rack ears on each side. Store the screws in a safe place. Remove the top panel from the ADAT.

4. Look at the center of the ADAT transport and locate the Idler Wheel Assembly. Refer to the drawings on the next page for assistance in locating the Idler Wheel Assembly. It is in-between the two black Reel Hubs. Note that the Idler Wheel is held in place with a clip/spring assembly pulling it towards the Reel Motor Capstan. Also note that there is another spring located underneath the Idler Wheel Clip between the clip and the Idler Wheel itself, pushing upwards.

5. Remove the Idler Wheel Clip from the post by gently pushing it away from the post, so the post is in the wide part of the clip, and slowly lift it upwards. BE CAREFUL NOT TO LET THE IDLER WHEEL SPRING, LOCATED UNDERNEATH THE IDLER WHEEL CLAMP, SPRING UPWARDS AND GET LOST. YOU WILL NEED TO RE-INSERT THIS SPRING LATER IN THE PROCEDURE. Remove the Idler Wheel Clamp and Restraining Clip Spring assembly from the ADAT transport.

6. Remove the Idler Wheel Spring from the ADAT transport.

7. Remove the Idler Wheel from the Idler Wheel post by lifting it straight off of the post.

8. Insert the new Idler Wheel onto the Idler Wheel post. The recessed side of the Idler Wheel faces downwards. That is, the side with the small plastic post faces upwards.

9. Place the Idler Wheel spring on top of the Idler Wheel, so that it is centered around the Idler Wheel post.

10. Replace the Idler Wheel Clip and spring assembly onto the Idler Wheel post. Make sure the Idler Wheel clip is securely in place around the detent of the idler wheel post. Listen for an audible "click" when re-installing this part. Then, use a pair of tweezers or needle nose pliers to pull the hook end of the retaining clip spring around the Hub Actuator post.

11. It is always a good idea to plug in the ADAT, power the unit on, and insert a tape to verify proper operation of the unit (Play, Fast Forward and Rewind) prior to replacing the top panel. Use a non-essential tape!!!!!! DO NOT TOUCH ANY OF THE MOVING PARTS WHILE THE ADAT IS OPERATING!!!!

12. Replace the top panel by installing all the phillips head screws. Install all screws prior to completely tightening any of the screws.

13. Installation is complete!

See also "Cleaning an ADAT Idler Wheel"

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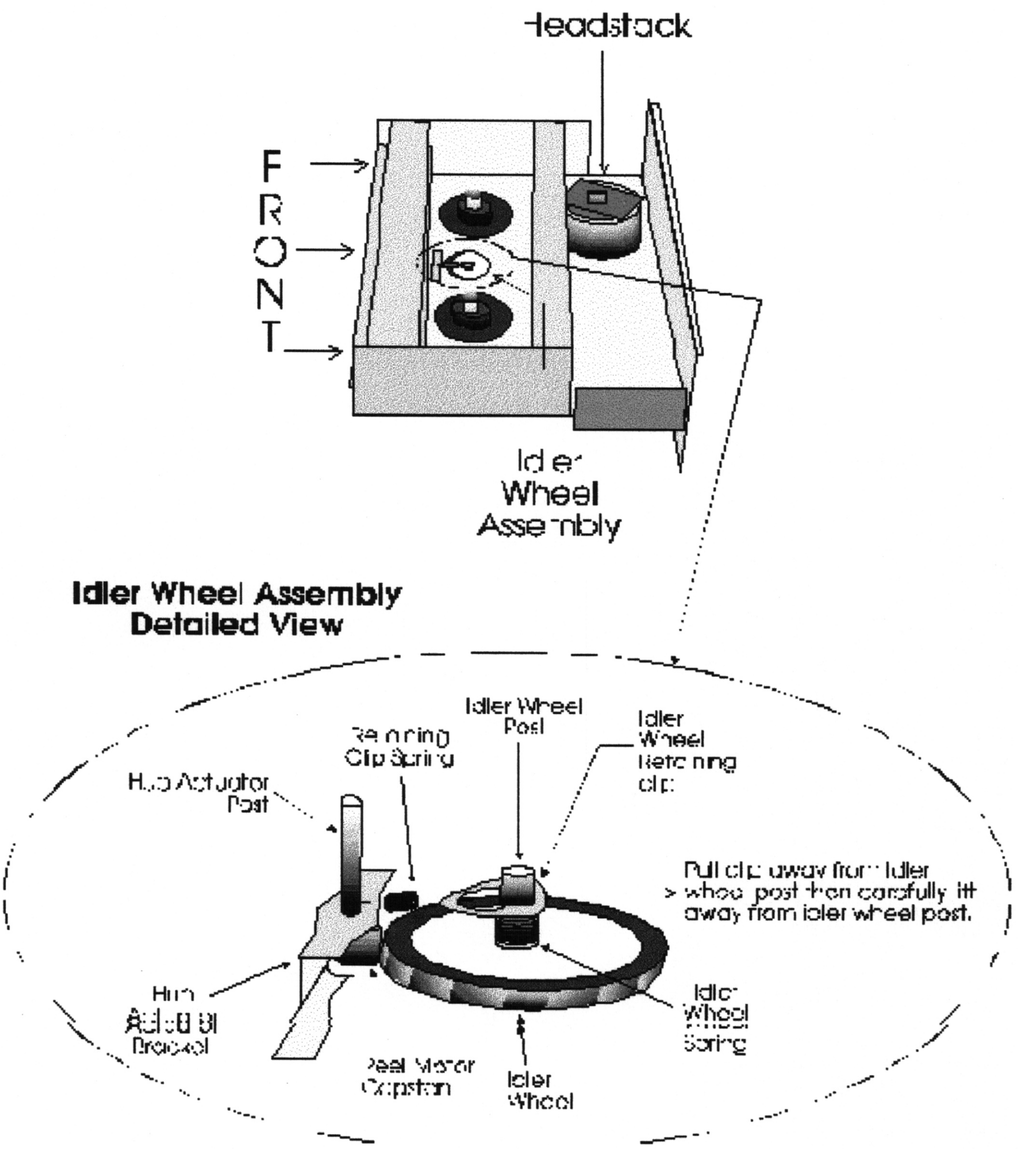
See also:

Idler wheel replacement

Head cleaning

Idler Wheel DIAGRAM



Pull clip away from Idler wheel post then carefully lift away from idler wheel post.

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